

Total Maximum Daily Load (TMDL) Development for Unnamed Tributary to Chickahominy River

**Public Meeting
November 24, 2003**





Introduction

- **DEQ PRO** - Mark Alling (General discussion of TMDLs and UT to Chickahominy River impairments)
- **Tetra Tech Inc.** - Clint Boschen (Technical approach for UT to Chickahominy River TMDL)



The what, why, and how behind Total Maximum Daily Loads (TMDLs)



What is a TMDL?

- **TMDL = TOTAL MAXIMUM DAILY LOAD**
- **Amount of pollution a water body can receive without negatively affecting the stream uses**
 - **Statewide Beneficial uses** are: aquatic life, fishing, shellfishing, swimming, drinking water
- **TMDLs include all forms of pollution**
 - point sources (from a discharge pipe)
 - non-point sources (from land surfaces or atmosphere)
 - natural background sources (swampwater)



Why are TMDLs needed?

“The primary mission of the TMDL program is to protect **public health and the **health of impaired aquatic ecosystems** by ensuring attainment of **water quality standards**, including beneficial uses.” (US EPA, 1998)**



Why - the legal basis for TMDLs

- **1972 Federal Clean Water Act (CWA) and 1997 State Water Quality Monitoring, Information and Restoration Act (WQMIRA)**
 - Requires water sampling
 - Assessment of sample data every 2 years
 - Listing of impaired waters from the data
 - TMDL development for impaired waters
 - Implementation plans for the TMDLs



How - the Elements of a TMDL

- Be developed to meet water quality standards
- Be developed for critical (worst case) stream conditions
- Consider seasonal variations
- Include point sources and non-point sources
- Include a margin of safety for the stream
- Consider impacts of background conditions
- Have public participation
- Have reasonable assurance for implementation



How - The TMDL study process

- **Characterize the watershed**
 - Gather and analyze data
 - Involve stakeholders and public in verifying existing data and collecting additional data
 - Use computer models to develop TMDL
- **Conduct public meeting (with 30 day comment period)**
- **Develop and release draft TMDL report (with another 30 day comment period)**
- **TMDL Approval by EPA**
- **TMDL Implementation Plan**



How - the Water Quality Standards

- **Standards** are regulations based on federal and state law that set limits on pollutants
- Dissolved Oxygen > 4 mg/l instantaneous, or > 5 mg/l daily mean
- pH between 6 and 9
- Water Temperature <32 C
- the General Standard:
 - “All state waters shall be free from substances [...] which are harmful to human, animal, plant or aquatic life.” (9 VAC 25-260-20)
- Listing of Impaired Waters and TMDL development are based on >10% violation rates of water quality standards, or impaired aquatic insect populations.



How the TMDL helps the stream

- The TMDL determines the **cause** of the impairment, also called the stressor(s), and
 - determines the **reductions** in pollution necessary to restore the waterbody to above the water quality standards



UT to Chickahominy River Impairments

- **1.49 miles from the Tyson plant discharge downstream to the Chickahominy River confluence, for depleted aquatic insects, first identified in 1994, violated the general benthic standard.**
- **0.40 miles from pond dam below Tysons plant to Chickahominy River confluence for high pH, first identified during 2003 benthic TMDL study.**



Please Send Public Comments

30 Day Public Comment Period:

November 24 - December 23, 2003

Send written comments to:

Mark Alling

4949-A Cox Rd

Glen Allen VA 23060

804/527-5021

msalling@deq.state.va.us

A photograph of a river or stream with bare trees and a fallen branch in the foreground. The water is calm, reflecting the surrounding trees. A large, fallen branch lies across the left side of the frame, extending into the water. The background shows a dense forest of bare trees, suggesting a late autumn or winter setting. The overall tone is muted and naturalistic.

Questions?

Info on TMDLs:
www.deq.state.va.us/tmdl